

fibres. It lies somewhere between 5° C. and 0° C. The cardiac inhibitory fibres of the rabbit offer at least one exception, since they lose their conductivity at as high a temperature as 15° C. 3. A nerve impulse in passing into a stretch of fibre of different temperature may suffer an increase or a diminution in force, according as the temperature of this portion of the nerve is above or below that in which the impulse originated. Thus, in the motor and vaso-constrictor fibres, cooling a small area of the nerve below the point of stimulation caused a decrease in the strength of the impulses passing through it proportional to the fall in temperature, while with the vaso-constrictor fibres the strength of the nerve impulses increased in consequence of passing through an area warmer than that in which the stimulus was applied. 4. The method of cooling may be used to differentiate the physiological varieties of nerve fibres combined in a common trunk. (a) To separate the vaso-dilators from the vaso-constrictors in the sciatic. (b) To separate the reflex vaso-constrictors from the reflex vaso-dilators in the same trunk. (c) To separate the inhibitory fibres of respiration in the vagus from those causing augmented respirations. (d) To separate the effect of the cardiac inhibitory fibres upon rate from the effect upon strength of heat. 5. The difference in reaction toward cooling and heating and stimulation shown by the different physiological varieties of nerve fibres is not clearly connected with the existence of a medullated sheath or with varieties in thickness of the sheath. It depends, apparently, upon a difference in structure in the conducting portion of the fibres. 6. Vaso-constrictor and cardiac inhibitory fibres are not fatigued after continuous functional activity for an hour. 7. Certain nerve fibres lose their irritability completely or in part (stimulation fatigue) at the point of stimulation, when the stimulation (electrical) is prolonged for several minutes. This property is shown most clearly by the vaso-constrictor and sweat fibres of the sciatic nerve. Vaso-constrictor fibres at their origin from the cord and in the cervical sympathetic, when they are medullated, do not exhibit this phenomenon. A. F.

PATHOLOGICAL.

Pathological Study of a Case of Acromegaly
by Professor Arnold.—(Virchow's Archiv., vol.

cxixv.). The onset coincided with the meno-pause. The face, hands, feet and trunk increased rapidly in volume for the first six months, continued to grow for three or four years, and then remained stationary for six years. The patient had paræsthesiæ in the extremities, and attacks of migraine. Towards the end of her life a condition resembling general progressive paralysis developed.

The following pathological changes were found (*post mortem*): In the hypertrophied parts thickening of the epidermis and cutis, a large amount of pigment in the rete Malpighi, hypertrophy of the sudorific glands, numerous warts and mollusca fibrosa; thickening of the walls of the blood-vessels; thickening of many of the bones, arthritis deformans of the articulations; the length of the bones unchanged; the muscles partly hypertrophic, partly atrophic; the peripheral nerves and the lower part of the cord thickened (increase of the interstitial connective tissue with hyaline degeneration of the nervous elements); degeneration of the pyramidal tracts; two areas of cerebral softening; the *hypophysis* increased in size, containing an adenoid tumor; the right lobe of the thyroid, and the thymus hypertrophied. In this case there is hypertrophy of the soft parts and the bones with degeneration of the muscles, nerves, and blood-vessels. The changes found in the hypophysis are insufficient to explain the affection, and the author considers the condition to be of tropho-neurotic origin.

R. K. M.

Some Diseases of the Thyroid Gland.—(Greenfield, *Lancet*, December 16 and 23, 1891). Dr. Greenfield presents the following summary of his admirable Bradshaw lecture: He had endeavored to show: 1. The peculiar characters of the changes in the thyroid gland in Graves' disease. These consist mainly in a proliferation, which, from its character, suggests increase of secretion. In what way the chemical nature is altered we do not know. 2. That there is sufficient evidence that removal of even a part of the affected thyroid gland causes the diminution, and often cure, of the disease, with atrophy of the remaining part of the gland. This can scarcely be explained, unless on the hypothesis that the enlargement of the gland is distinctly causal. 3. That the condition of the central nervous system and of the cervical sympathetic nerves reveals evidence of a partly chronic, partly acute, widespread nutritive